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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,350	01/23/2004	Seung Ho Yoo	LT-0045	4920

34610 7590 10/20/2006

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EXAMINER

GUPTA, PARUL H

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,350

Applicant(s)

YOO, SEUNG HO

Examiner

Parul Gupta

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-26 are pending for examination as interpreted by the examiner. No IDS was considered.

Specification

2. The disclosure is objected to because of the following informalities: applicant refers to the detection of the disc rotational velocity reduction ratio, which is actually described as being a calculation in paragraph 0028. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the method of calculating the velocity reduction ratio. The explanation given in paragraph 0028 does not suffice, as the result is not a ratio, but rather a deceleration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2627

4. Claims 1-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamaguchi, US Patent Publication 2004/0090891.

Regarding claims 1, 10, and 19, Yamaguchi discloses a method and apparatus such as a disc device for controlling stop of a disc in a disc device (abstract), comprising: means for rotating a disc including a drive unit (element 2 of figure 1) configured to rotate a disc (paragraph 0012); a tracking drive circuit for performing a tracking servo control (the frequency measuring section serves the same purpose) for detecting a rotational velocity of said disc (paragraphs 0020, 0021, and 0024); means for reducing a rotational velocity of said disc through a signal provided by servo controller ("break signal", as explained in paragraph 0036) to said drive unit ("spindle motor driving circuit" of element 15 of figure 1, as explained in paragraph 0036) to reduce a rotational velocity of said disc; means for detecting a rotational velocity reduction ratio (difference of frequencies) of said disc based on the velocity reduction through the servo controller (paragraph 0024); means for calculating a brake voltage time application with reference to said detected disc rotational velocity and disc rotational velocity reduction ratio (paragraph 0025); and means for braking said disc based on said calculated brake voltage time application through a signal to said drive unit to brake said disc based on said calculated brake voltage application time provided by the servo controller (paragraph 0029).

Regarding claims 2, 11, and 20, Yamaguchi discloses in the paragraph 0020 the method, apparatus, and disc device, wherein the disc comprises an optical disc and the disc device comprises an optical disc device.

Regarding claims 3, 12, and 21, Yamaguchi discloses the method, apparatus, and disc device, wherein the optical disc device comprises an optical disc reproduction device (paragraph 0020).

Regarding claims 4, 13, and 22, Yamaguchi discloses the method, apparatus, and disc device, wherein the drive unit that serves as the means for rotating a disc comprises a spindle motor (element 2 of figure 1 as explained in paragraph 0020).

Regarding claims 5 and 14, Yamaguchi discloses the method and apparatus, wherein means for braking said disc based on said calculated brake voltage application time comprises means for applying a brake voltage to said spindle motor for said calculated brake voltage application time to stop the disc (paragraph 0029).

Regarding claims 7, 16, and 24, Yamaguchi discloses the method, apparatus, and disc device, wherein the servo controller that serves as means for detecting a rotational velocity reduction ratio of said disc based on the velocity reduction comprises means for detecting said rotation velocity reduction ratio of said disc based upon a reduced rotational velocity of said disc after the lapse of a predetermined period of time from a start point time of said velocity reduction (the method described in paragraphs 0024-0026 uses the frequency to serve the same purpose).

Regarding claims 8, 17, and 25, Yamaguchi discloses the method, apparatus, and disc device, wherein said rotational velocity reduction ratio of said disc is detected based upon a period of time required until a current rotational velocity of said disc is

Art Unit: 2627

reduced to a predetermined rotational velocity (paragraphs 0031 and 0033 explain how judgment is made of when the frequency difference is at the proper threshold).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 9, 15, 18, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi in view of Shen, US Patent Publication 2004/0022153.

Regarding claims 6, 15, and 23, Yamaguchi teaches the limitations of claims 1, 10, and 19. Yamaguchi does not but Shen teaches the method, apparatus, and disc device, wherein the servo controller ("angular velocity control circuit" of element 24 of figure 2) that serves as the means for detecting a rotational velocity of said disc comprises means for detecting said rotational velocity of said disc based upon information regarding a position of said disc. Paragraphs 0033-0036 explain how the angular velocity is calculated based on the motor coefficient, which is dependent on the velocity that the spindle motor spins. As angular velocity measures speed and direction of rotation, the calculations are indirectly dependent on position of the disc. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of detecting the angular/rotational velocity based on position of the disc as taught by Shen into the system of Yamaguchi. The motivation would be to efficiently bring the DC motor to a complete stop (paragraph 0042 of Shen).

Regarding claims 6, 15, and 23, Yamaguchi teaches the limitations of claims 1, 10, and 19. Yamaguchi does not but Shen teaches the method, apparatus, and disc device, wherein the servo controller ("angular velocity control circuit" of element 24 of figure 2) that serves as the means for detecting a rotational velocity of said disc comprises means for detecting said rotational velocity of said disc based upon information regarding a position of said disc. Paragraphs 0033-0036 explain how the angular velocity is calculated based on the motor coefficient, which is dependent on the velocity that the spindle motor spins. As angular velocity measures speed and direction of rotation, the calculations are indirectly dependent on position of the disc. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of detecting the angular/rotational velocity based on position of the disc as taught by Shen into the system of Yamaguchi. The motivation would be to efficiently bring the DC motor to a complete stop (paragraph 0042 of Shen).

Regarding claims 9, 18, and 26, Yamaguchi teaches the limitations of claims 1, 10, and 19. Yamaguchi does not but Shen teaches the method, apparatus, and disc device, wherein said brake voltage application time is in proportion to said rotational velocity of said disc and in inverse proportion to said rotational velocity reduction ratio of said disc (paragraphs 0040-0042). Equation (7) also explains the same concept as is given in paragraphs 0029-0031. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of the given relations as taught by Shen into the system of Yamaguchi. The motivation would be to allow precise control of the DC motor to bring the disc to a complete stop (paragraph 0012 of Shen).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260. The examiner can normally be reached on Monday through Thursday, from 9:30 AM to 7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PHG
10/10/06


ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER